WHAT IS CLAIMED:

1. An adjustment mechanism for an adjustment area of a variable-shape flow surface with two opposite skin surfaces, comprising:

a plurality of whirl chambers swivelably arranged next to one another so that the whirl chambers are swivelable relative to one another;

said whirl chambers comprising lateral stiffening elements and longitudinal stiffening elements;

joints structured and arranged to jointedly couple said lateral stiffening elements and said longitudinal stiffening elements of said whirl chambers

a first drive tube section and a second drive tube section being arranged between adjacent longitudinal stiffening elements;

a pump coupled to said first and second drive tube sections;

a control device functionally connected to said pump to swivel adjacent whirl chambers around joint axes via complementary volume changes in said first and second drive tube sections.

2. The adjustment mechanism in accordance with claim 1, wherein said pump provides a predetermined volume in said first and second drive tube sections via a pressure medium.

3. The adjustment mechanism in accordance with claim 1, wherein said joint axes run between said first and second drive tube sections.

4. The adjustment mechanism in accordance with claim 1, wherein said pump provides the complementary volume changes through circulation or volume transfer of the pressure medium.

5. The adjustment mechanism in accordance with claim 4, wherein said control device is structured and arranged to control operation of said pump.

6. The adjustment mechanism in accordance with claim 1, wherein said first and second drive tube sections are connected to one another.

7. The adjustment mechanism in accordance with claim 6, wherein several tube sections composed of at least first and second drive tube sections are formed from a continuous drive tube.

8. The adjustment mechanism in accordance with claim 1, wherein several drive tube sections are connected to one another and supplied by said pump.

9. The adjustment mechanism in accordance with claim 1, wherein individual drive tube sections are pressurizable in a targeted manner with individual pumps so that the curvature of an adjustment area is adjustable as a function of commands from said control device to said pump.

10. The adjustment mechanism in accordance with claim 1, wherein said lateral stiffening elements function as ribs of an adjustment area and said longitudinal stiffening elements function as spars.

11. The adjustment mechanism in accordance with claim 1, wherein said lateral stiffening elements function as spars of an adjustment area and said longitudinal stiffening elements function as ribs.

12. The adjustment mechanism in accordance with claim 1, wherein said first and second drive tube sections extend over a group of several whirl chambers arranged one behind the other in a whirl chamber longitudinal direction.

13. The adjustment mechanism in accordance with claim 12, wherein volumes for said first and second drive tubes of each group of whirl chambers are separately adjustable.

14. The adjustment mechanism in accordance with claim 1, further comprising:

additional whirl chambers that are mechanically coupled said plurality of whirl chambers, wherein said first and second drive tube sections are arranged between adjacent ones of said additional whirl chambers.

15. The adjustment mechanism in accordance with claim 14, further comprising a further pump to separately adjust pressures in said first and second drive tube sections associated with said additional whirl chambers.

16. The adjustment mechanism in accordance with claim 14, wherein said plurality of whirl chambers and said further whirl chambers are arranged one behind the other in a whirl chamber lateral direction and are supplied by an individual pump.

17. The adjustment mechanism in accordance with claim 1, wherein several drive systems are formed by said drive tube sections positioned between groups of whirl chambers that are jointedly connected to one another in a whirl chamber lateral direction, and said drive systems comprise one first drive tube, one second drive tube, and one pump.

18. The adjustment mechanism in accordance with claim 17, wherein several drive tube sections are positioned to adjust two adjacent whirl chambers relative to one another.

19. The adjustment mechanism in accordance with claim 1, wherein several drive tube sections are arranged between two adjacent longitudinal stiffening elements.

20. The adjustment mechanism in accordance with claim 1, wherein said joint comprises two force transmission elements with levers structured and arranged to form a lever arm with reference to a joint axis.

21. The adjustment mechanism in accordance with claim 20, wherein said levers have bearing faces arranged to face each other and to accept at least one tube section in order to impart opposite forces on said bearing faces.

22. The adjustment mechanism in accordance with claim 21, wherein said contact surfaces are positioned with respect to said joint axis such that, when a compressive force is exerted on the respective opposite contact surfaces, a force component results in the whirl chamber lateral direction that with two levers per

fork is at least half of the compressive force exerted by the respective drive tube section.

23. The adjustment mechanism in accordance with claim 19, wherein one force transmission element is arranged between two whirl chambers, and an effective lever arm of said two whirl chambers runs at an acute angle to the whirl chamber lateral direction on which the moment is to be exerted and the contact surfaces to accept the at least one drive tube section are positioned with respect to the joint axis, whereby, when a compressive force is exerted on opposing contact surfaces, a force component develops in a whirl chamber depth direction that with two pairs of contact surfaces per force transmission element is at least half of the compressive force exerted by the drive tube section.

24. The adjustment mechanism in accordance with claim 19, wherein said joint comprises as a structural joint.

25. The adjustment mechanism in accordance with claim 24, wherein said structural joint comprises two links that are reciprocally attached to the respective longitudinal stiffening elements of adjacent whirl chambers, the courses of which intersect in the joint axis in the whirl chamber longitudinal direction.

26. The adjustment mechanism in accordance with claim 25, wherein said longitudinal stiffening elements of adjacent whirl chambers are supported on bearing elements that are positioned next to the links relative to the whirl chamber longitudinal direction.

27. The adjustment mechanism in accordance with claim 1, wherein said flow surface is the wing of an aircraft.

28. A process for adjusting for an adjustment area of a variable-shape flow surface with two opposite skin surfaces, the process comprising:

swivelably positioning a plurality of whirl chambers next to one another so that the whirl chambers are swivelable relative to one another;

controlling the swiveling of the plurality of whirl chambers by changing a complementary volume of first and second drive tube sections positioned between adjacent longitudinal stiffening elements of the whirl chambers.